

Figure 1 : Partition of Oil Soluble Scale Inhibitor (Chem ID) at Different Temperatures

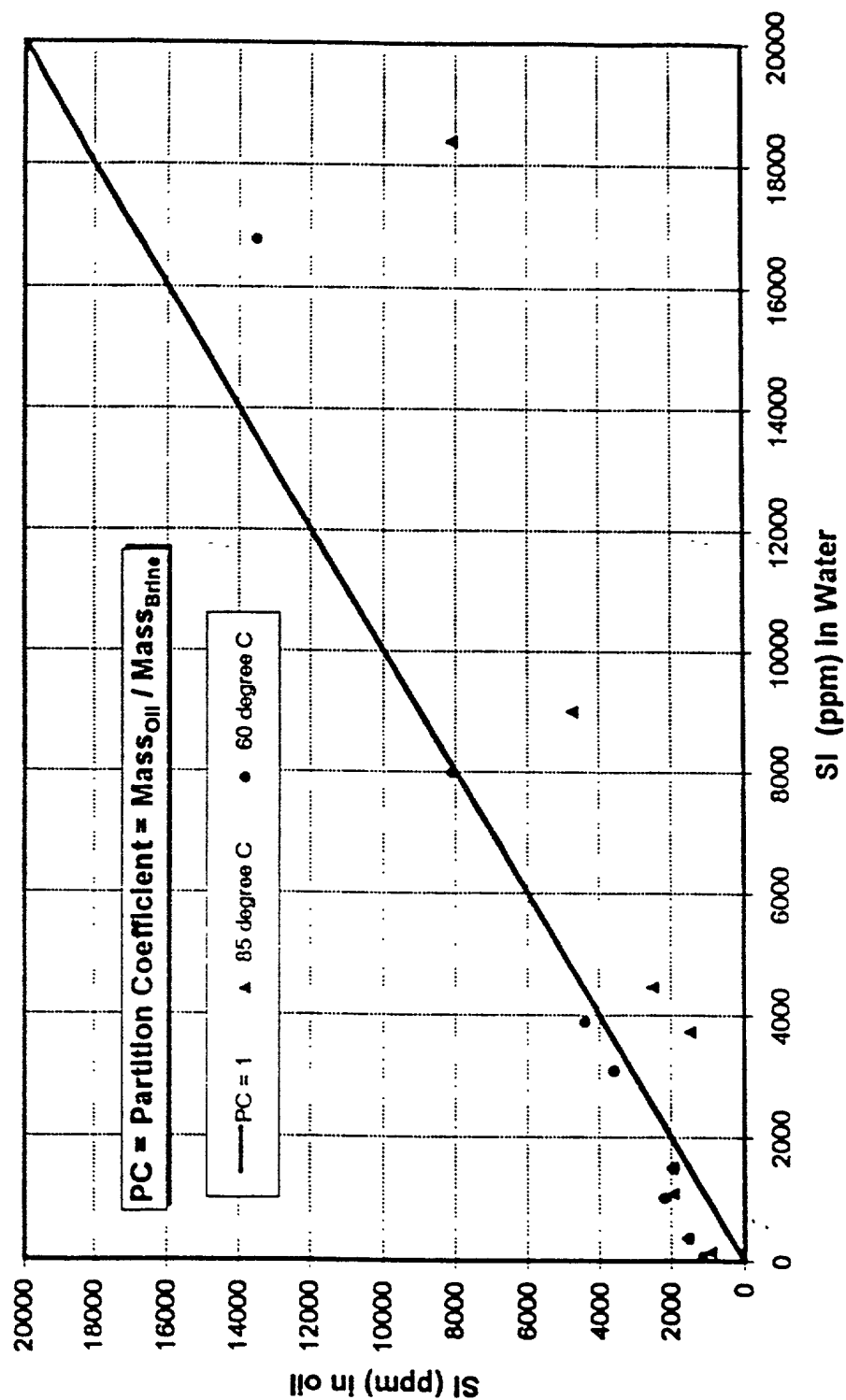


Figure 2 : Partition of OSI with Different Initial Concentrations

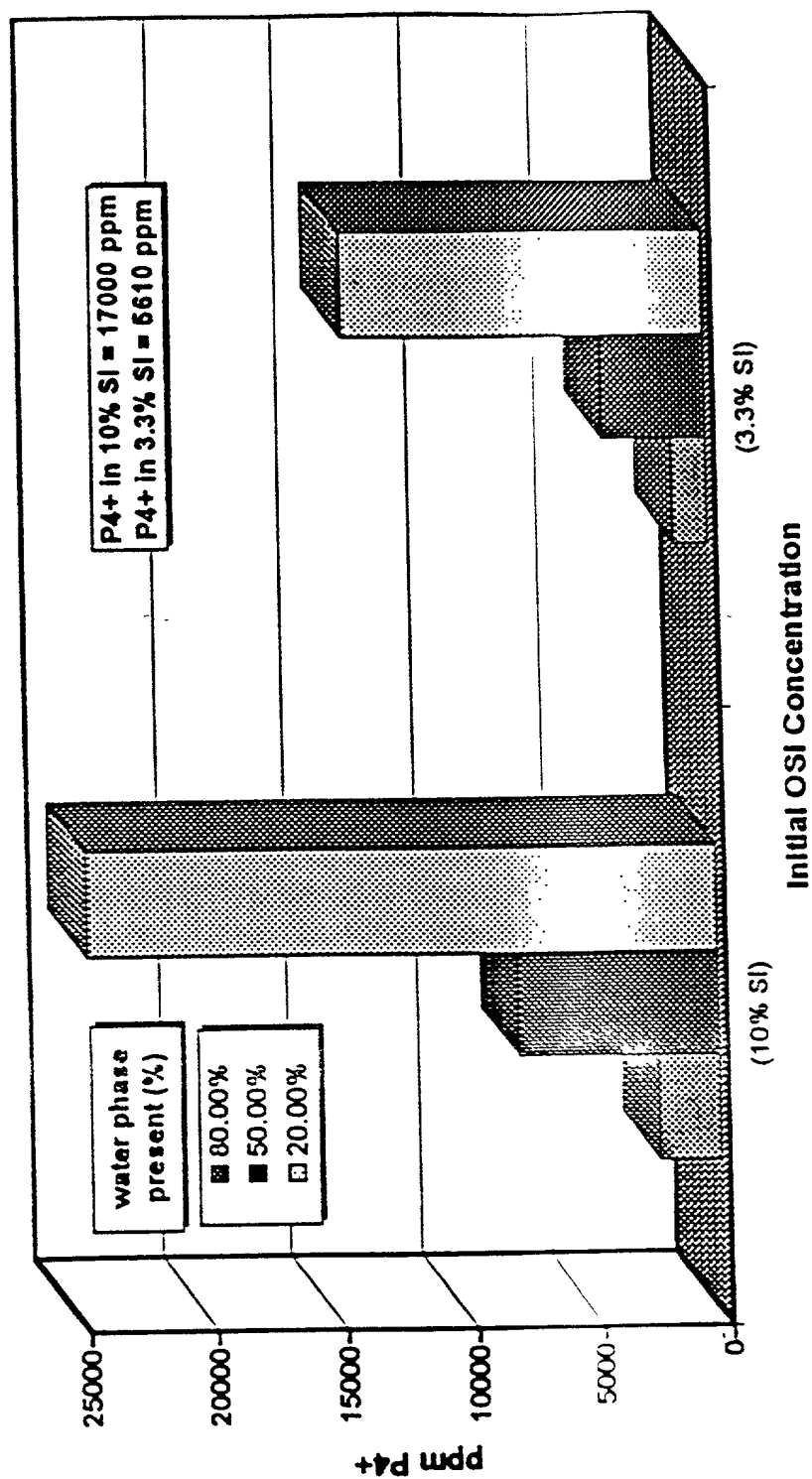


Figure 3 : MIC of Chem I (water based) using Brine C @90°C

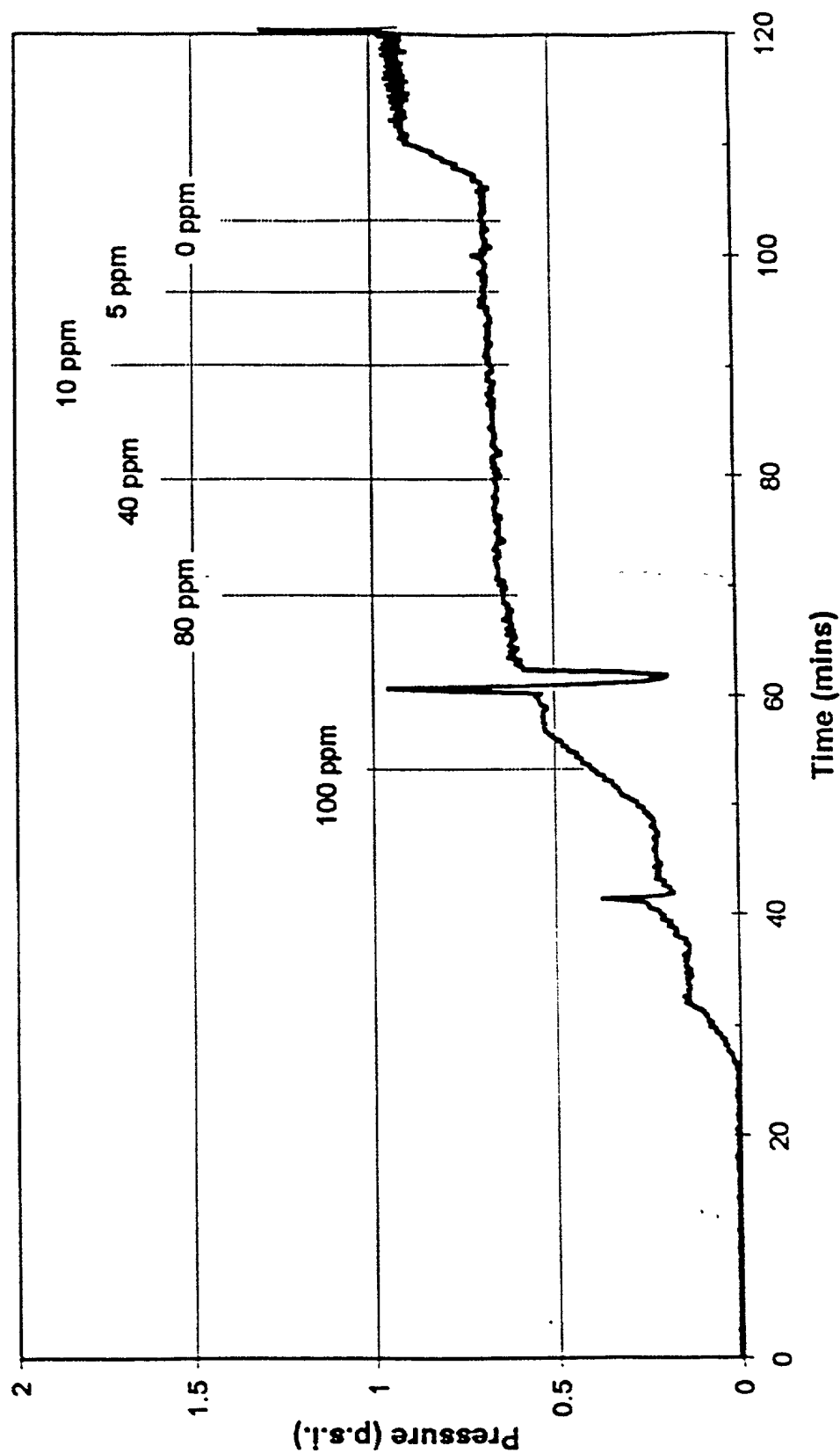


Figure 4 : MIC of Chem I (Oil based) using Brine C @90°C

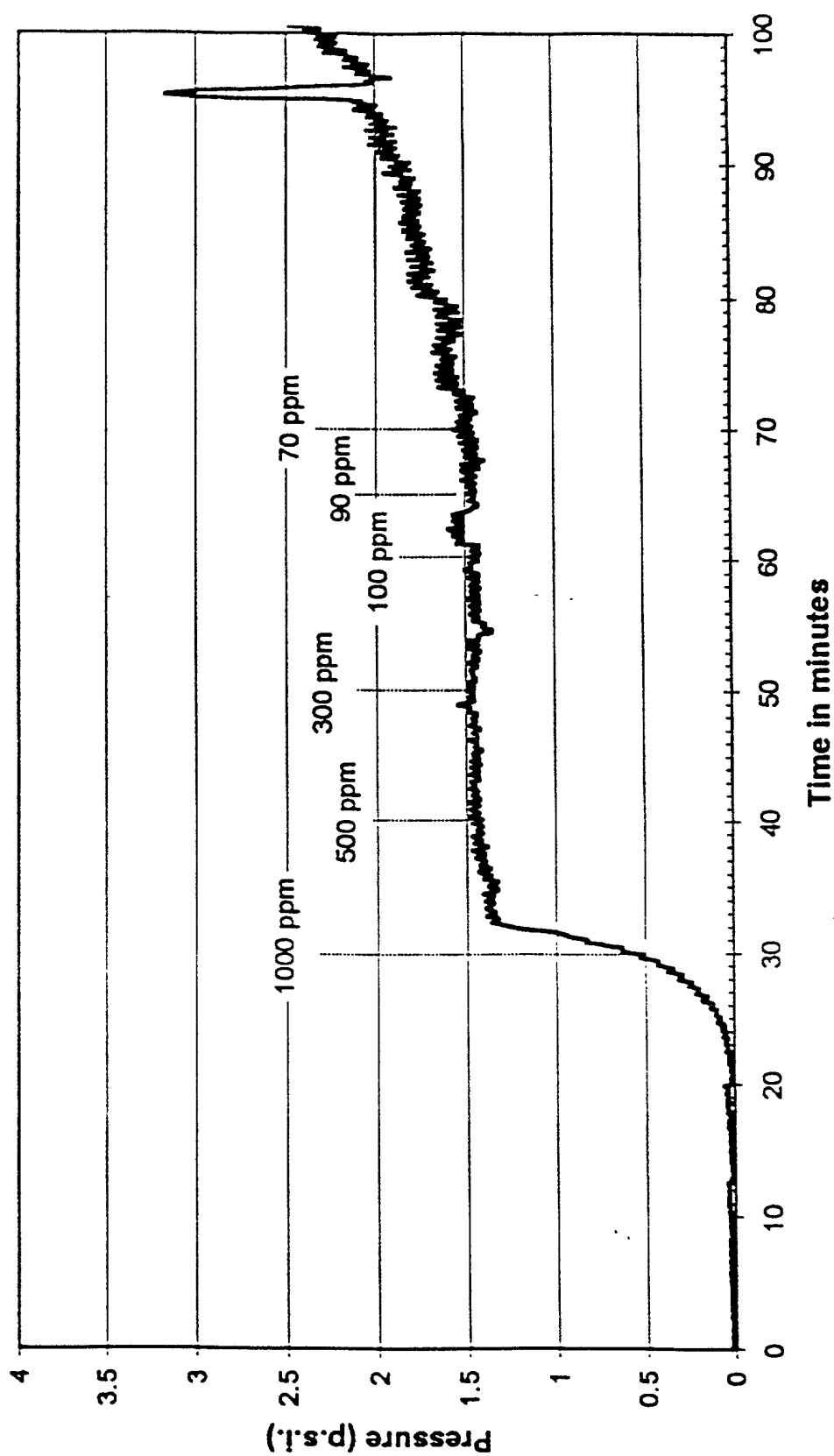


Figure 5 : MIC of Chem II (water based) using Brine C @90°C

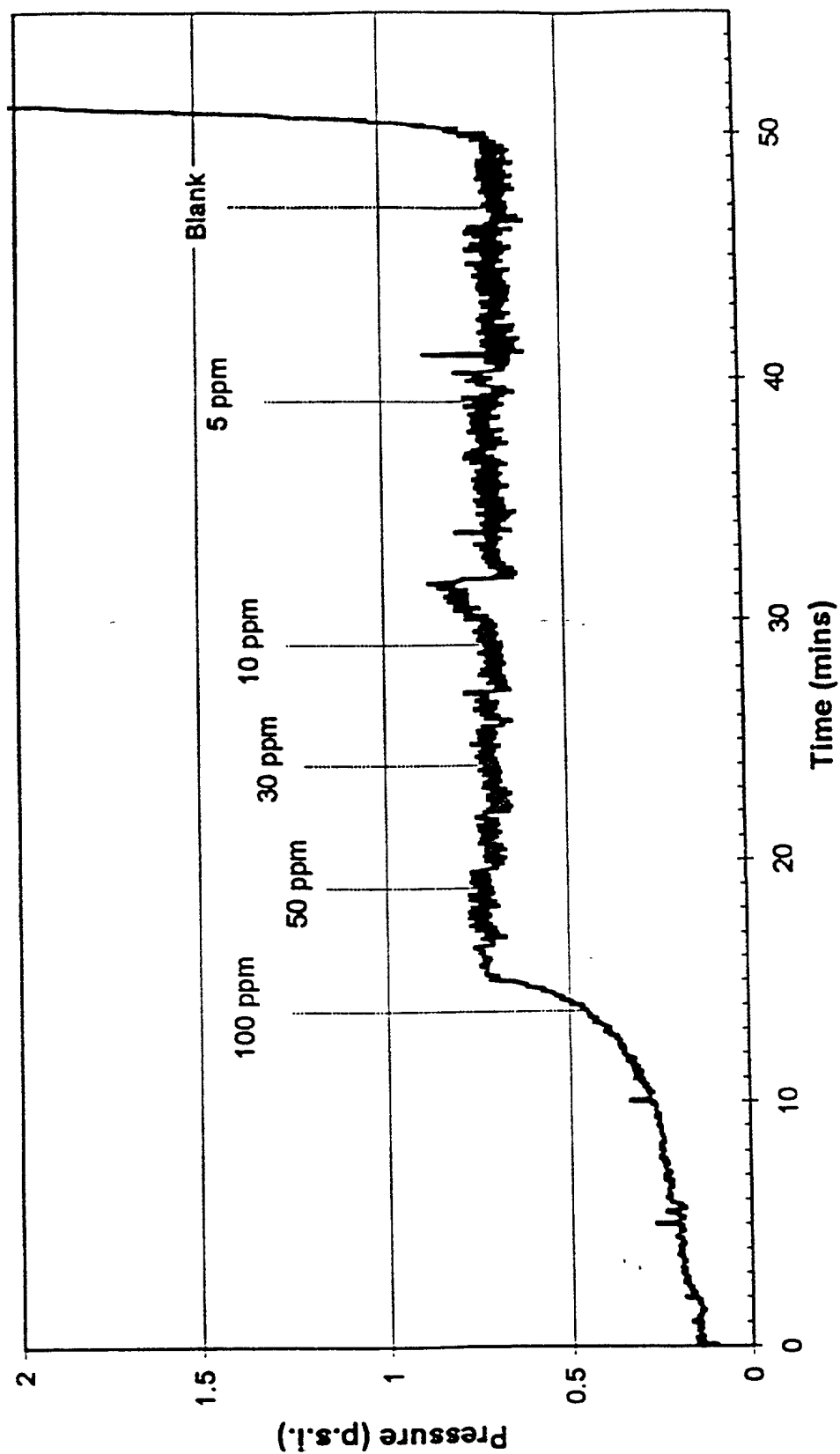


Figure 6 : MIC of Chem II (Oil based) using Brine C @90oC

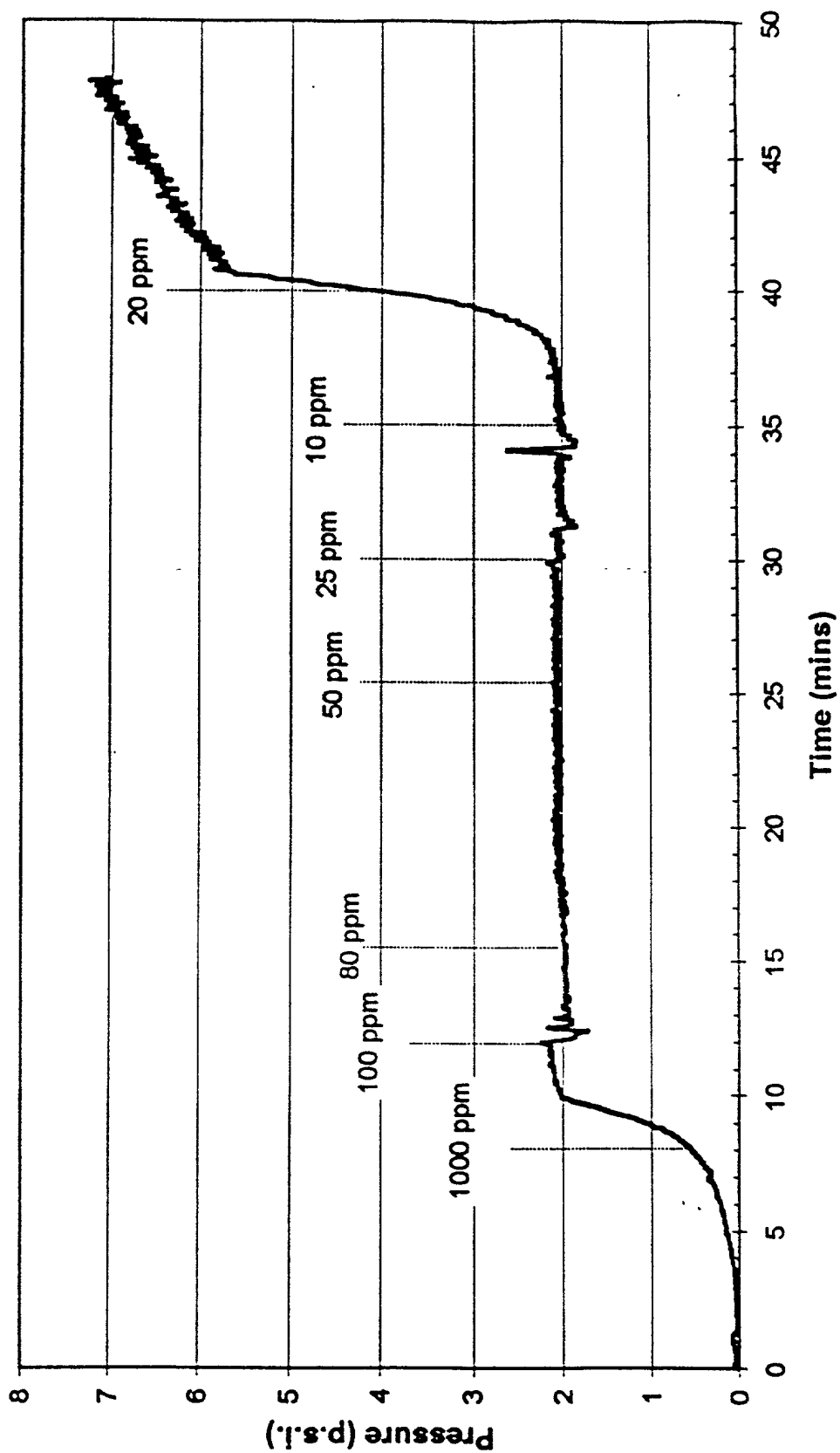


Figure 7 : MIC of Chem III (water based) using Brine C @90°C

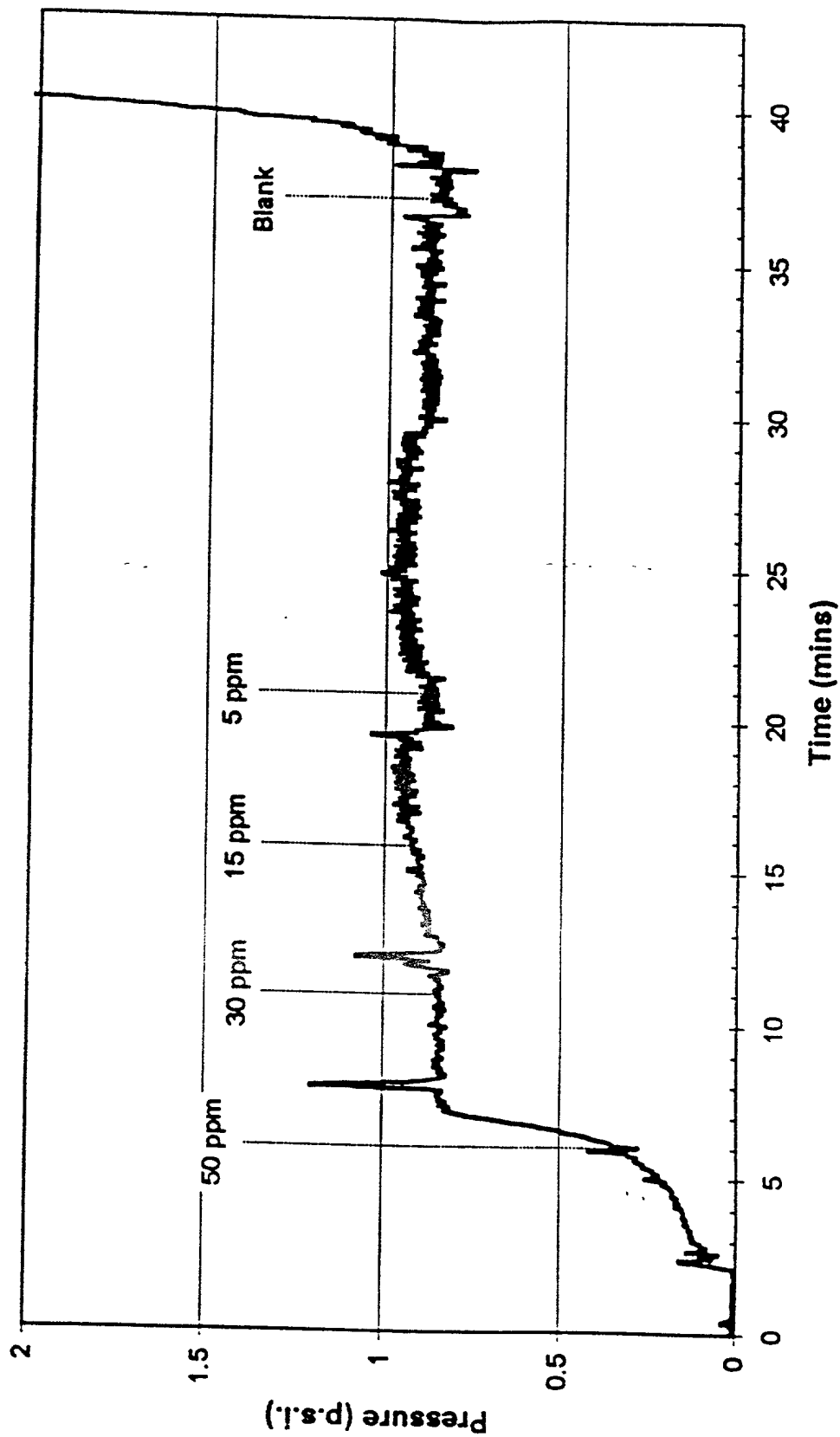


Figure 8 : MIC of Chem III (Oil based) using Brine C @90°C

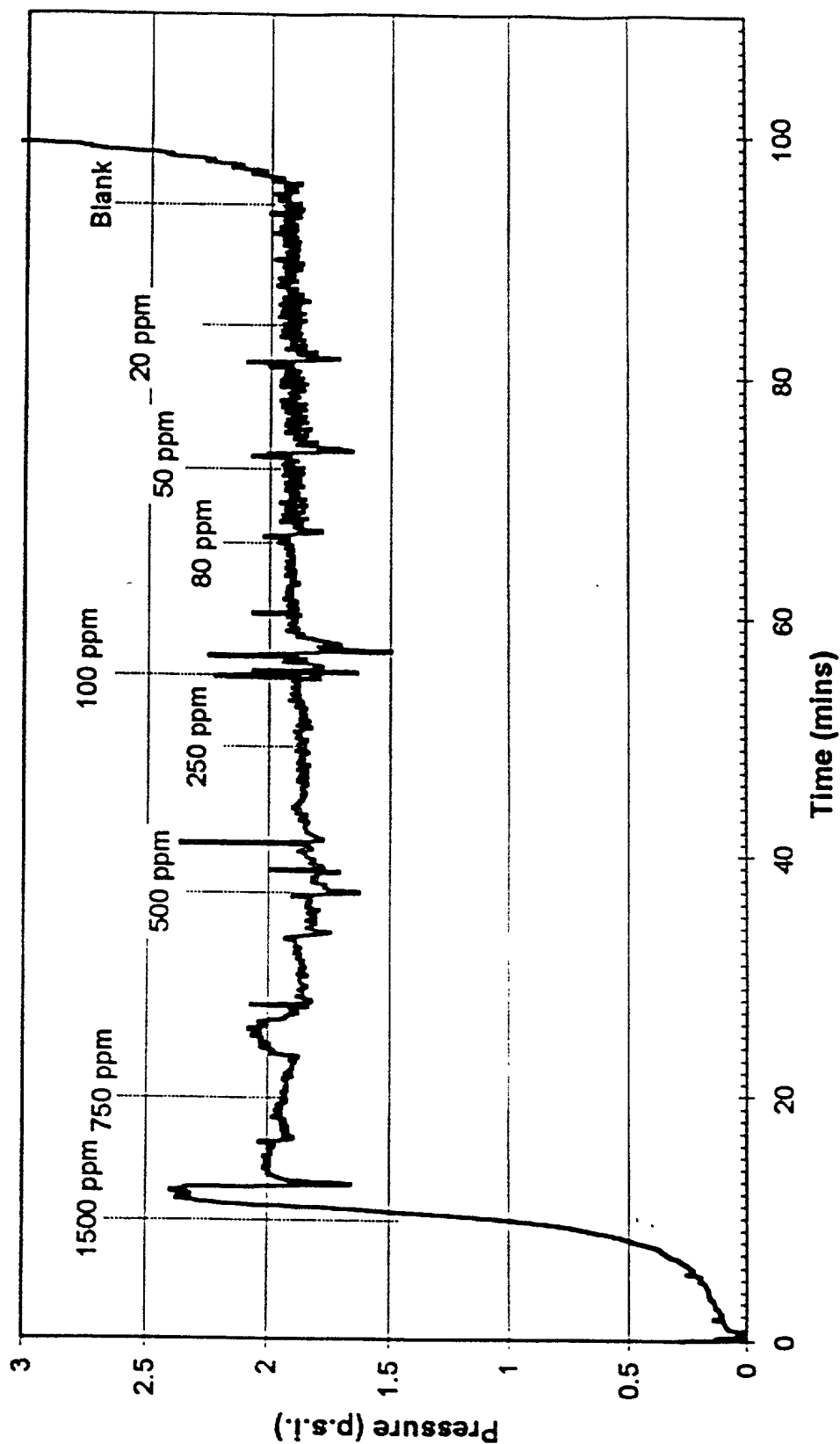


Figure 9: Injectivity Tests @90°C

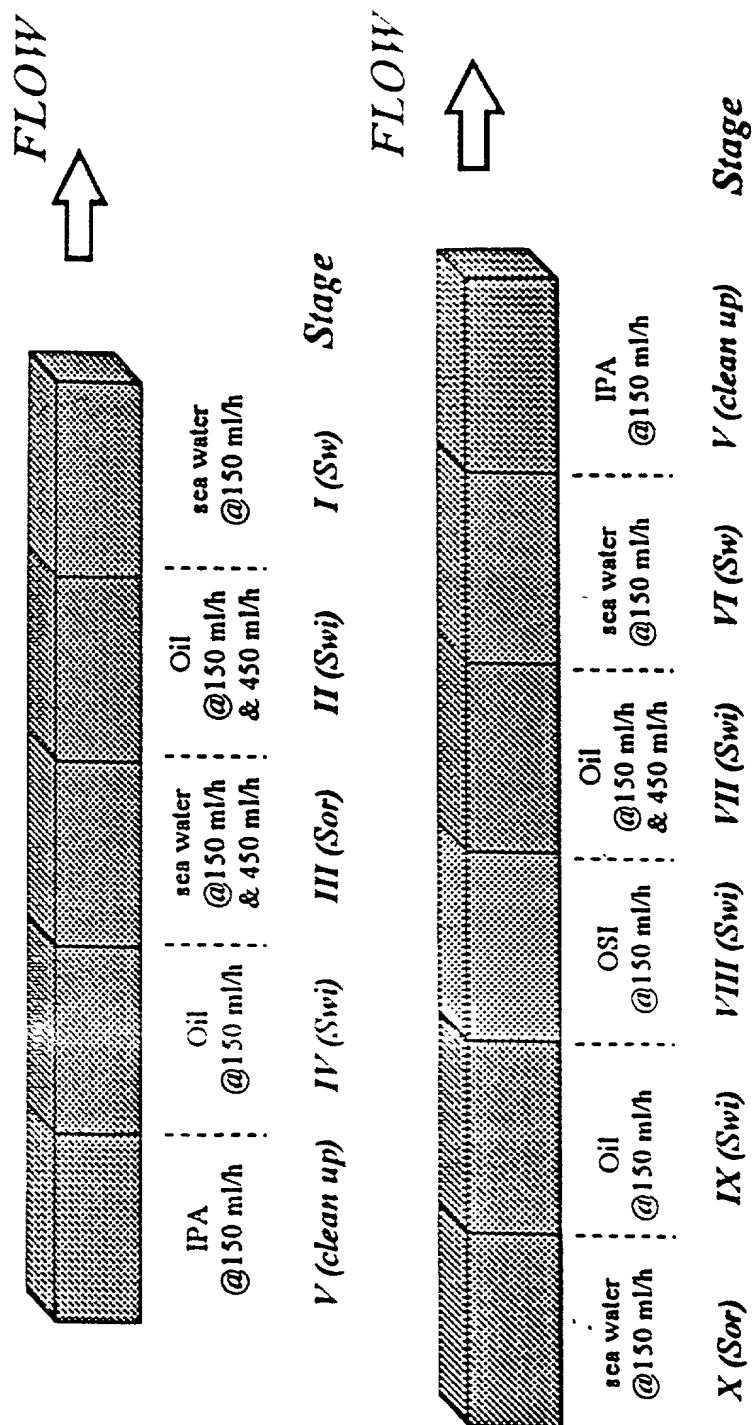


Figure 10: Injectivity Test - to obtain S_{wi}

SW displaced by Crude @ 90°C, Back Pressure = 220 psi

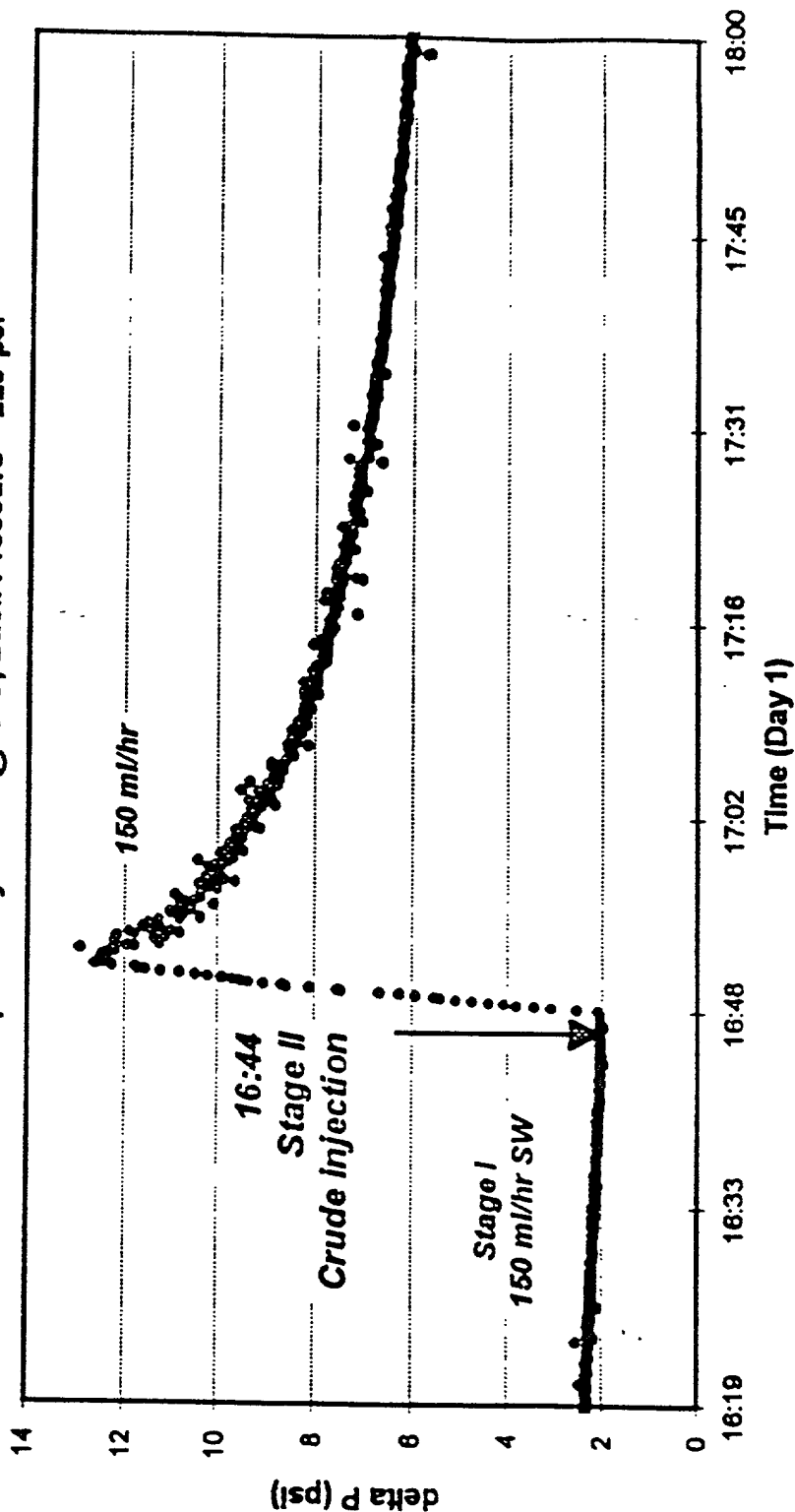


Figure 1: Injectivity Test - From Swi to Sor

Crude displaced by sea water @90°C, BP = 220 psi

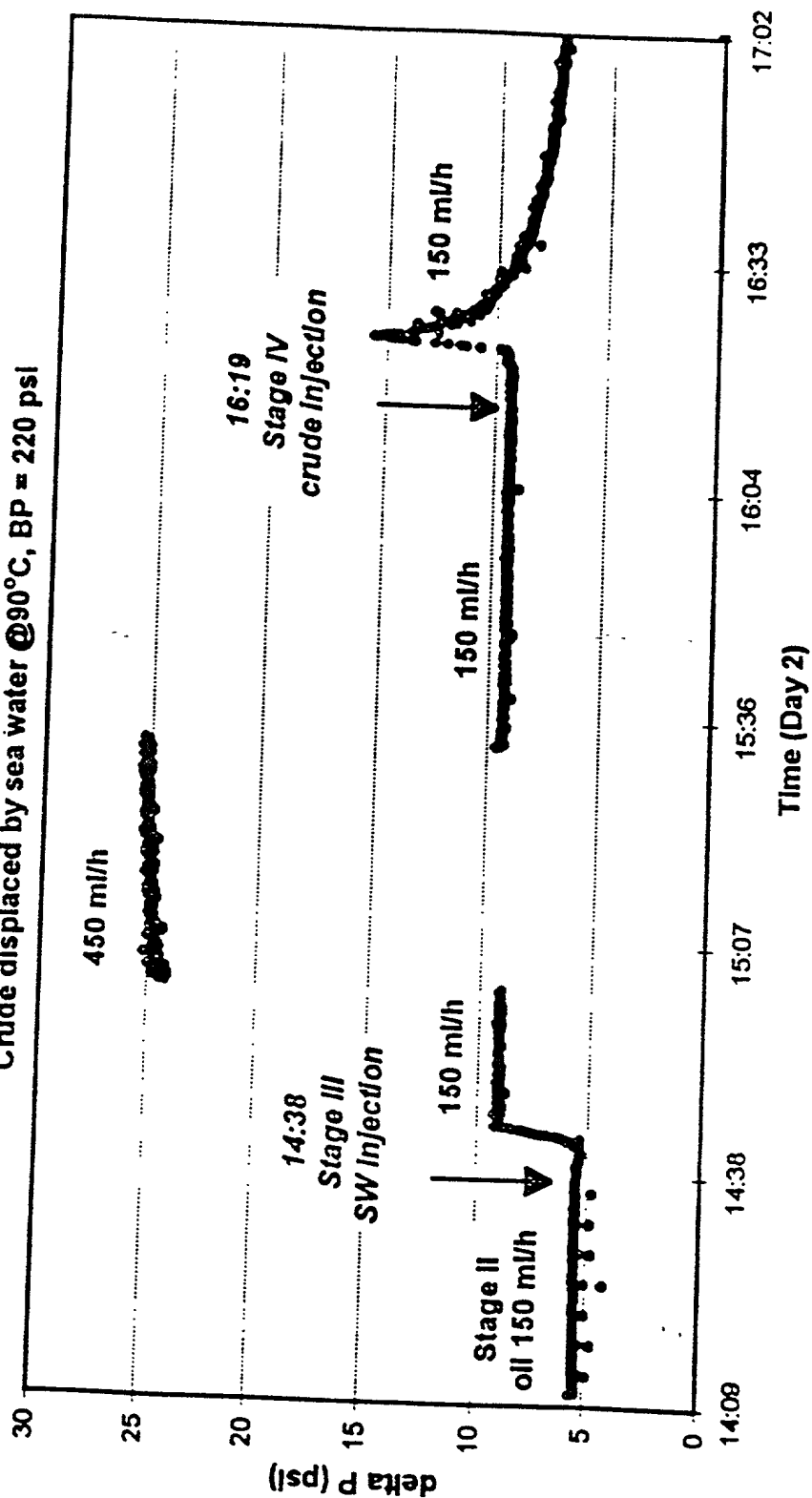


Figure 12: Core Cleaned with Miscible Solvent (IPA)

Precondition core for OSI Injection @90°C, BP ≈ 220 psi

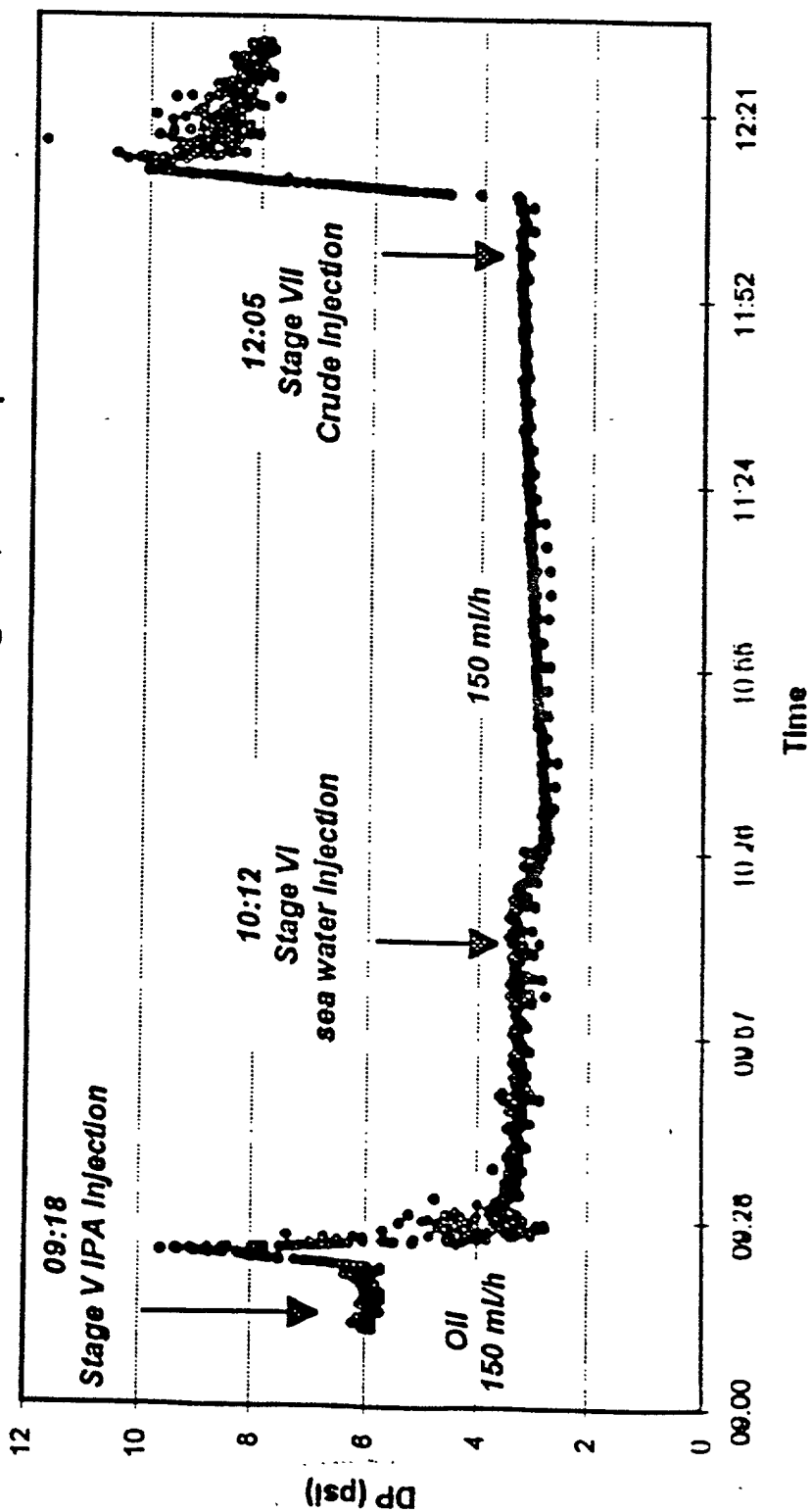


Figure 13: Oil Soluble Scale Inhibitor Injection

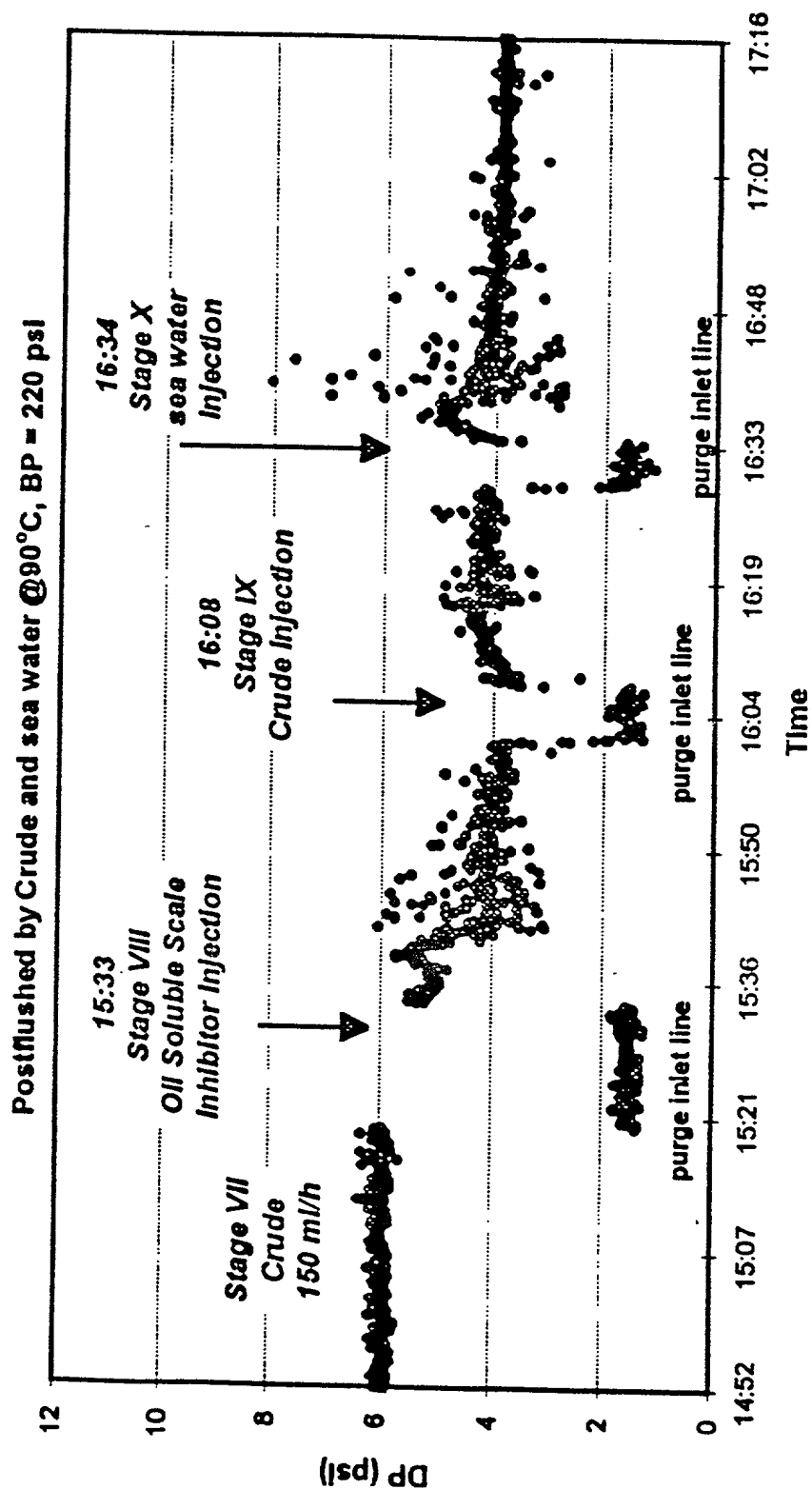


Figure 14. Plug 5. Ambient Temperature Kerosene Flood. A = 120 cc/hr, B = Ramp to 300 cc/hr, C = 120 cc/hr and $k_{o,eff}$ (I).

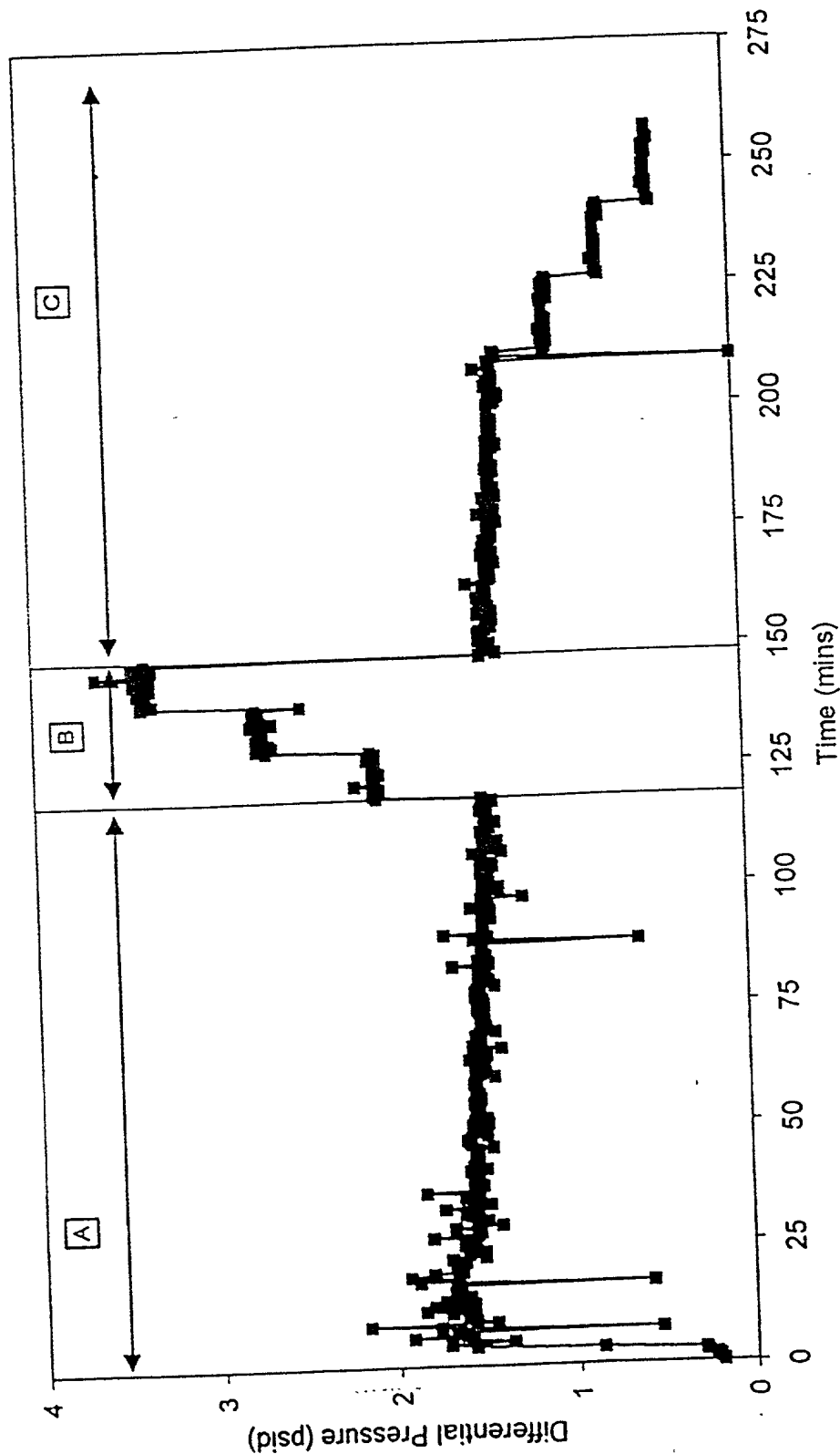


Figure 15. Plug 5. $k_{o,eff}$ (I) Kerosene. $T = 19.6^\circ\text{C}$, $k_{o,eff} = 350\text{ mD}$

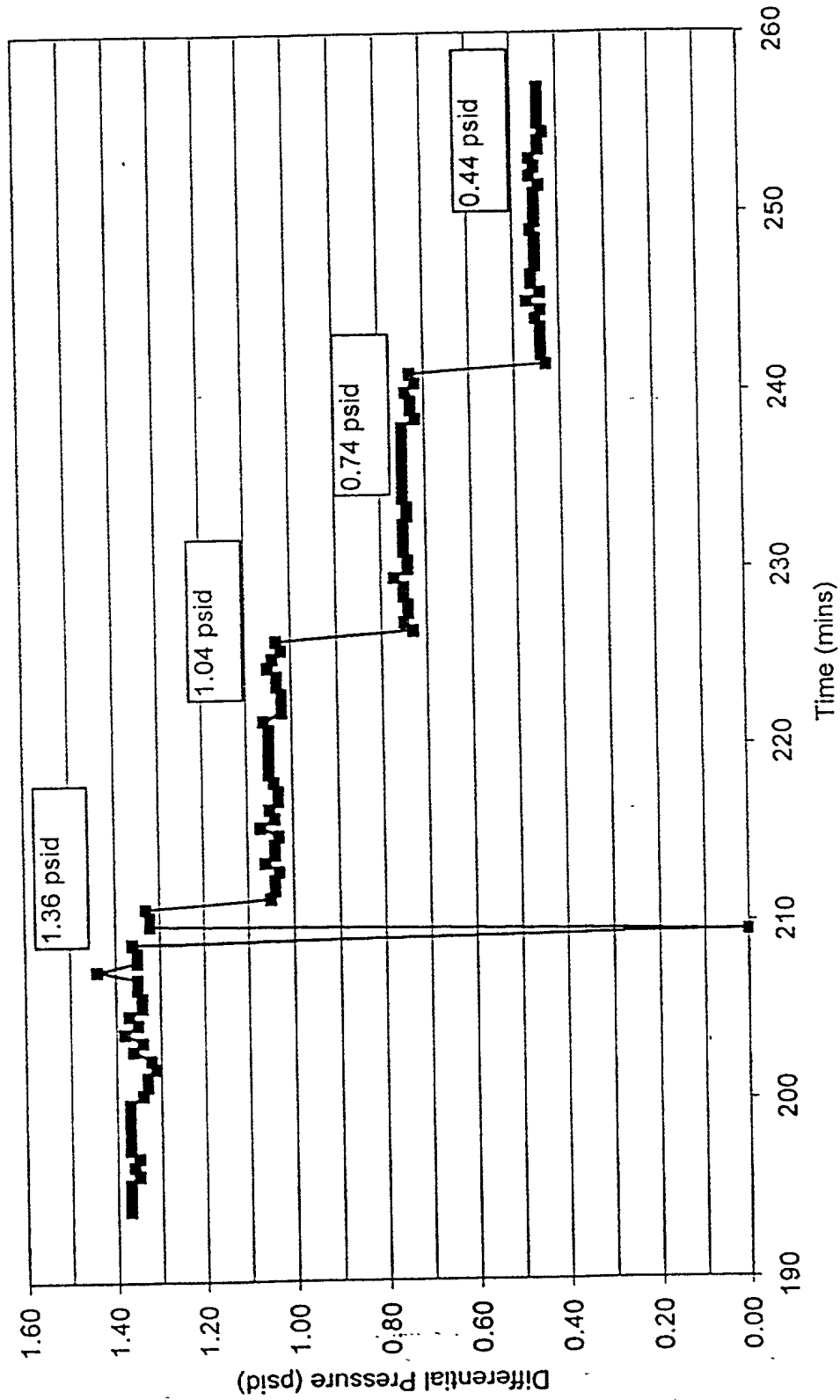


Figure 16. Plug 5. Crude Oil Flood and $k_{o,eff}$ (II). $T = 125\text{ C}$. Rates 120, 90, 60, 30 cc/hr.

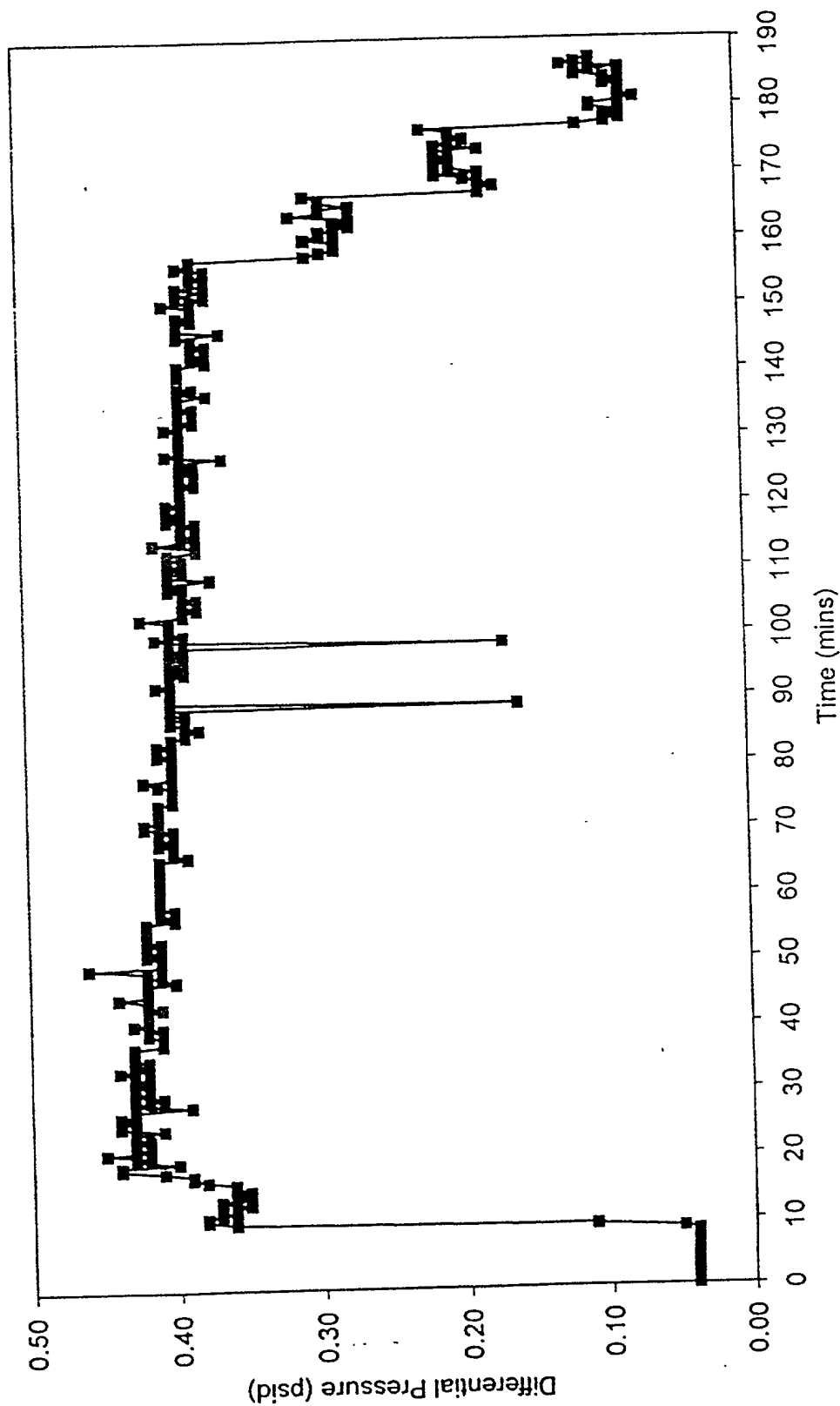


Figure 17. Plug 5. $k_{o,eff}(II)$. $T = 125\text{ C}$. Rates = 120, 90, 60, 30 cc/hr (detail).

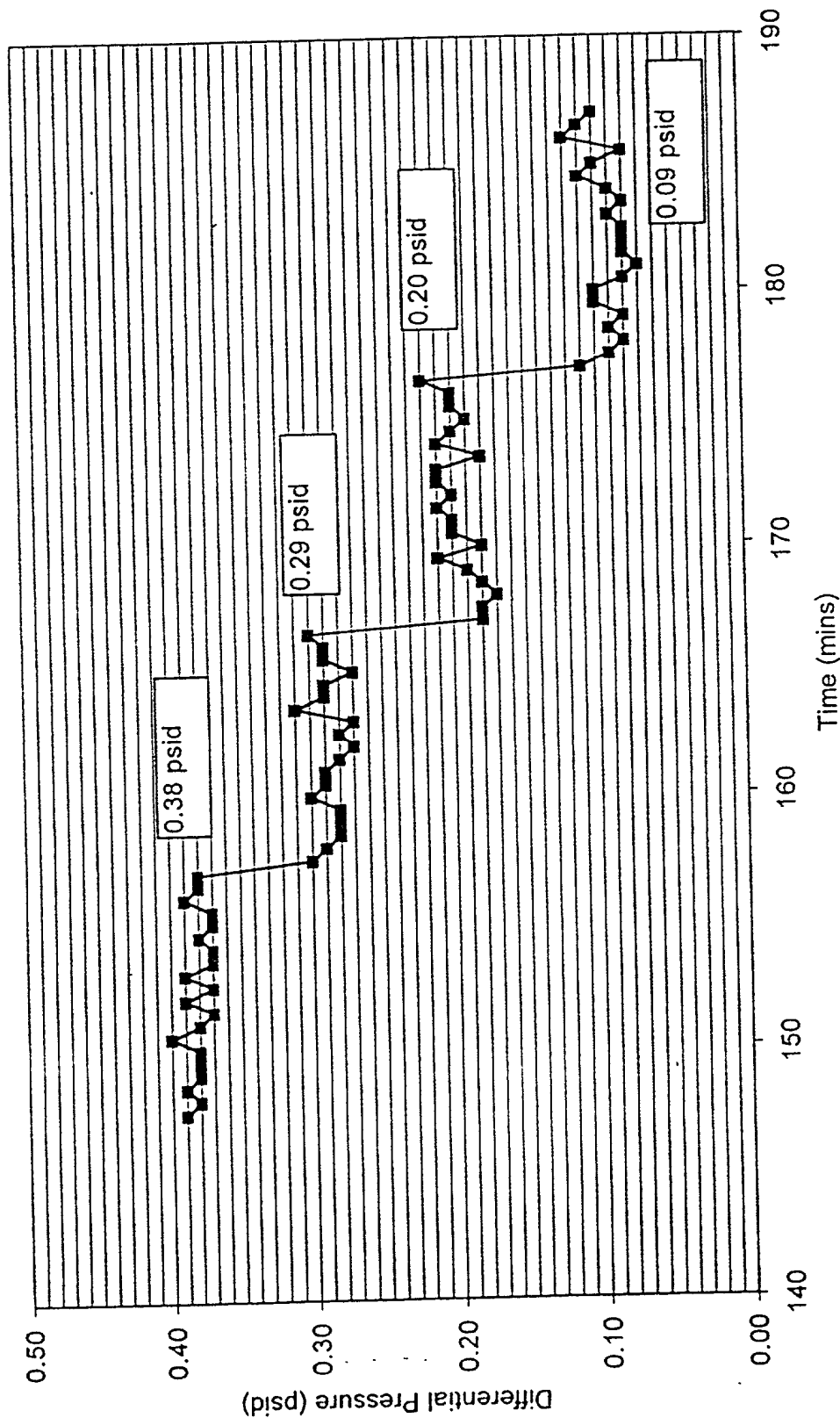


Figure 18. Plug 5. Chemical Injection. $T = 125\text{ C}$. All Stages = 120 cc/hr , A = Crude Oil, B = ArivaSol, C = OSI 153, D = OSI EXP1, E = ArivaSol. Transducer Zero = 0.04 psid .

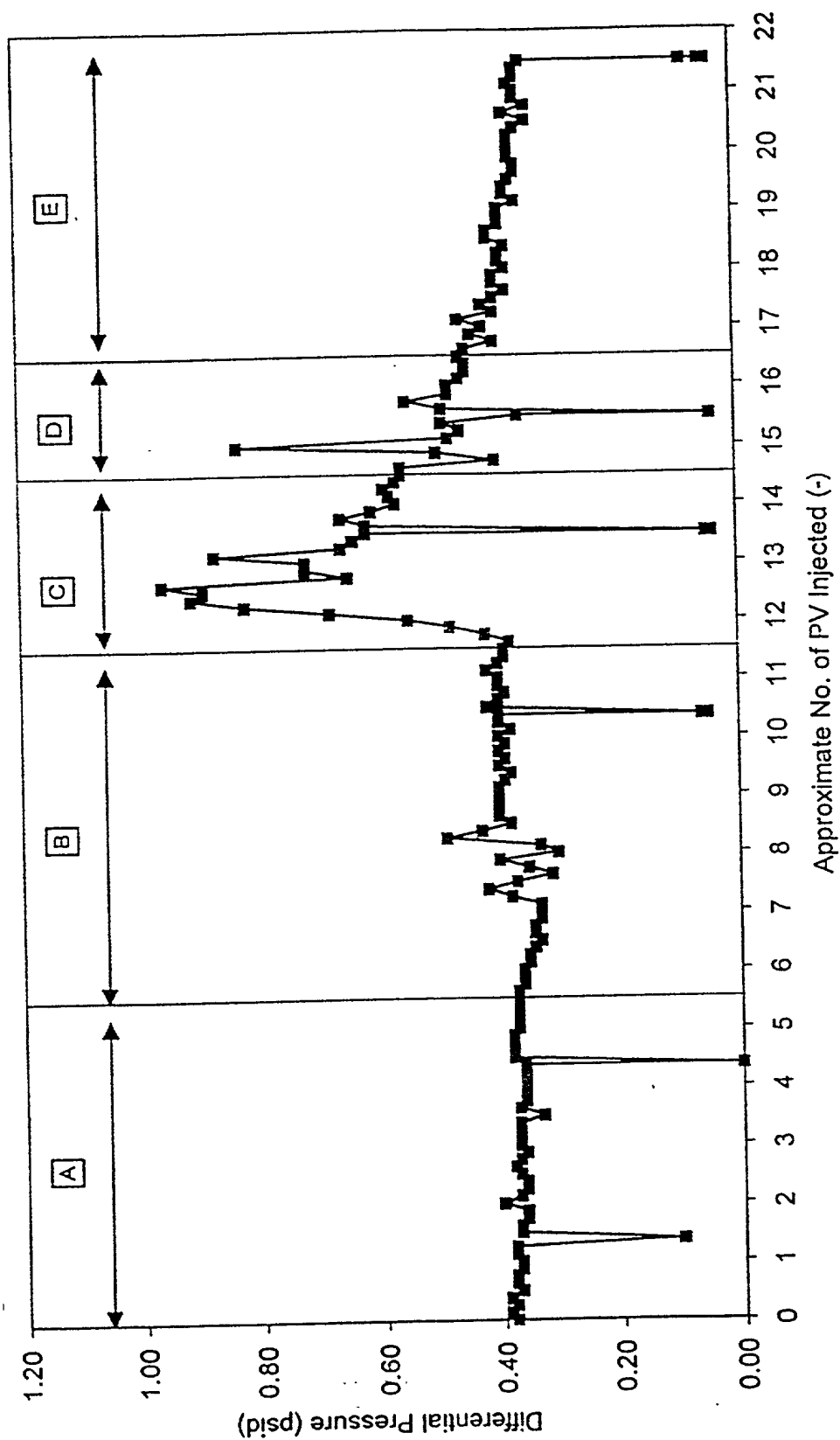


Figure 19. Plug 5. Chemical Return. $T = 125\text{ C}$. All Stages = 120 cc/hr, A = ArivaSol Overflush Return, B = Osi EXP1, C = Osi EXP2, D = ArivaSol, Transducer Zero = 0.02 psid.

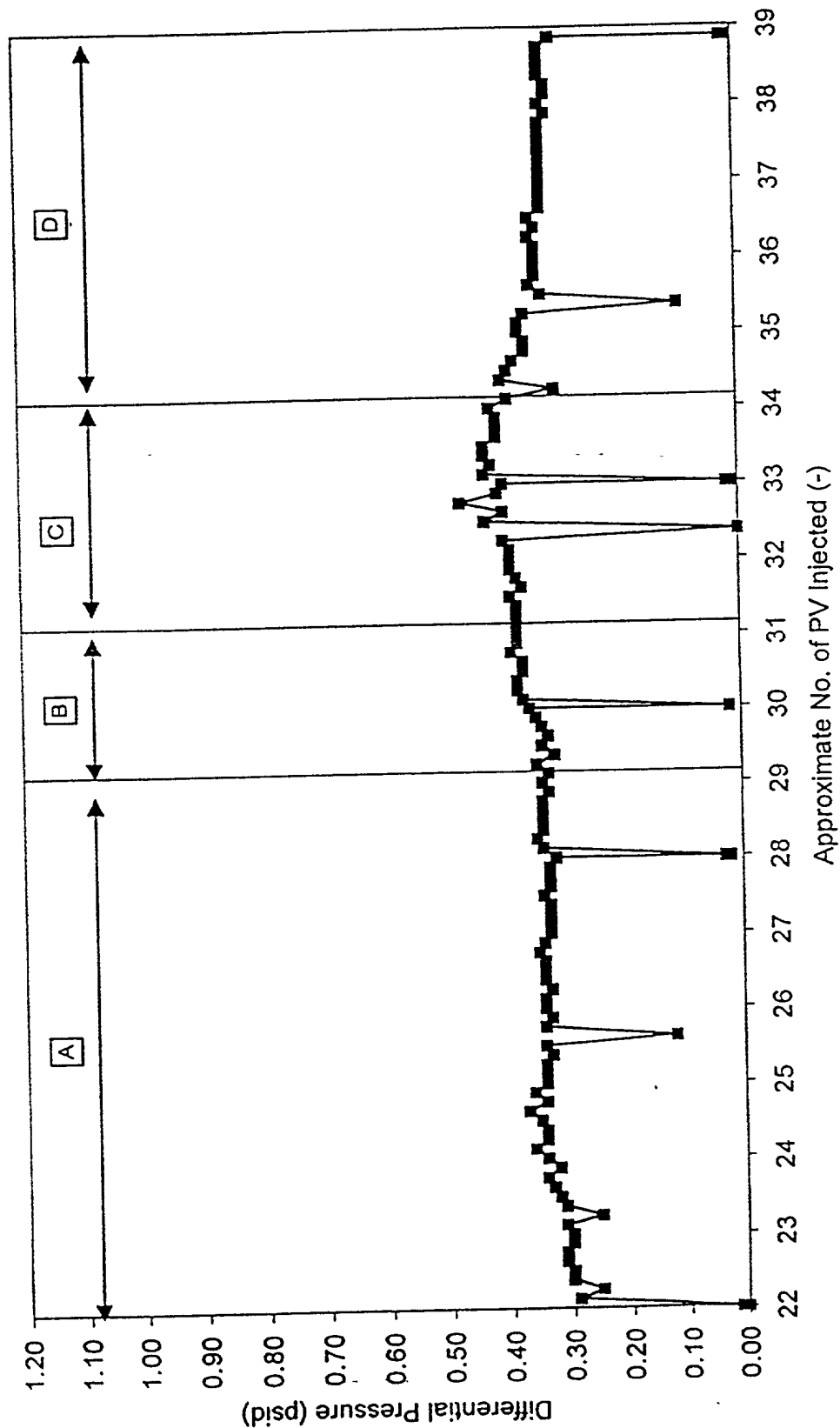


Figure 20. Plug 5. Crude Oil Return and Final Permeability. $T = 125\text{ C}$. A = ArivaSol, 120 cc/hr, B = Crude Oil Return and $K_{o,eff}$, 120, 90, 60, 30 cc/hr. Transducer Zero = 0.02 psid.

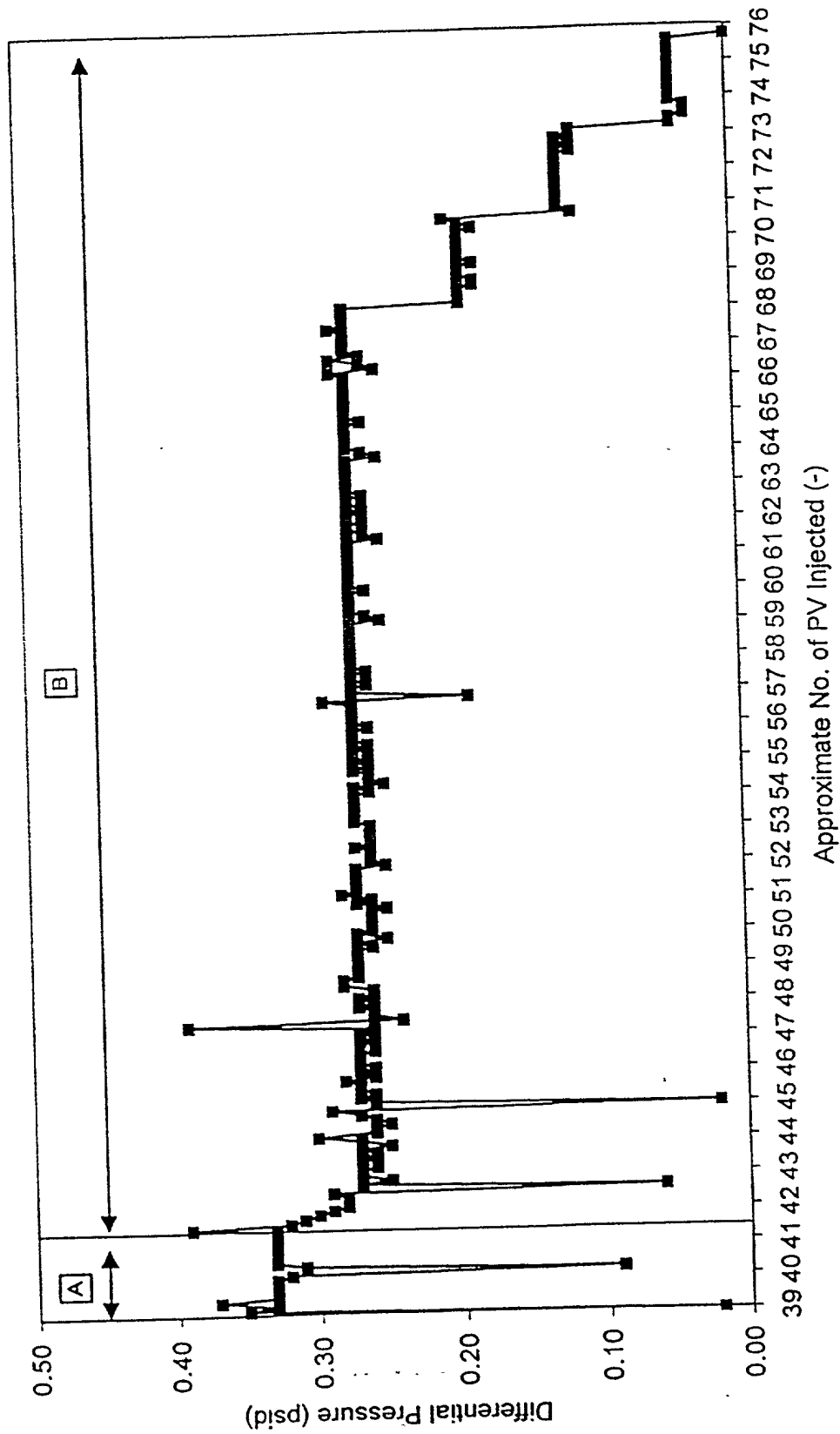


Figure 21. Plug 5. Final $K_{o,eff}$ III (Detail). $T = 125$ C. Rates = 120, 90, 60, 30 cc/hr.
Final Permeability = 443 mD for oil mix viscosity 0.63 cp. % Return Oil Permeability
= 127%.

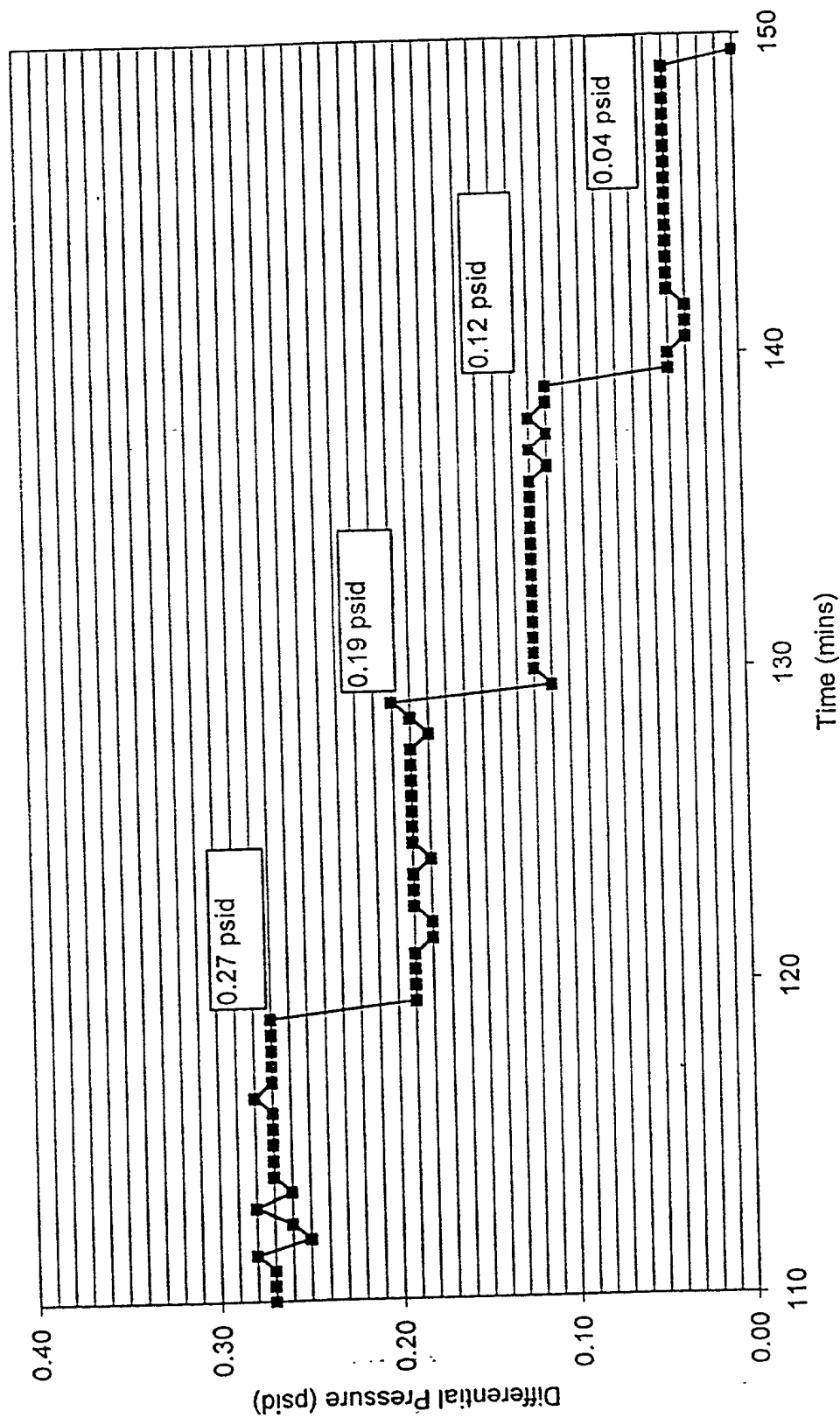
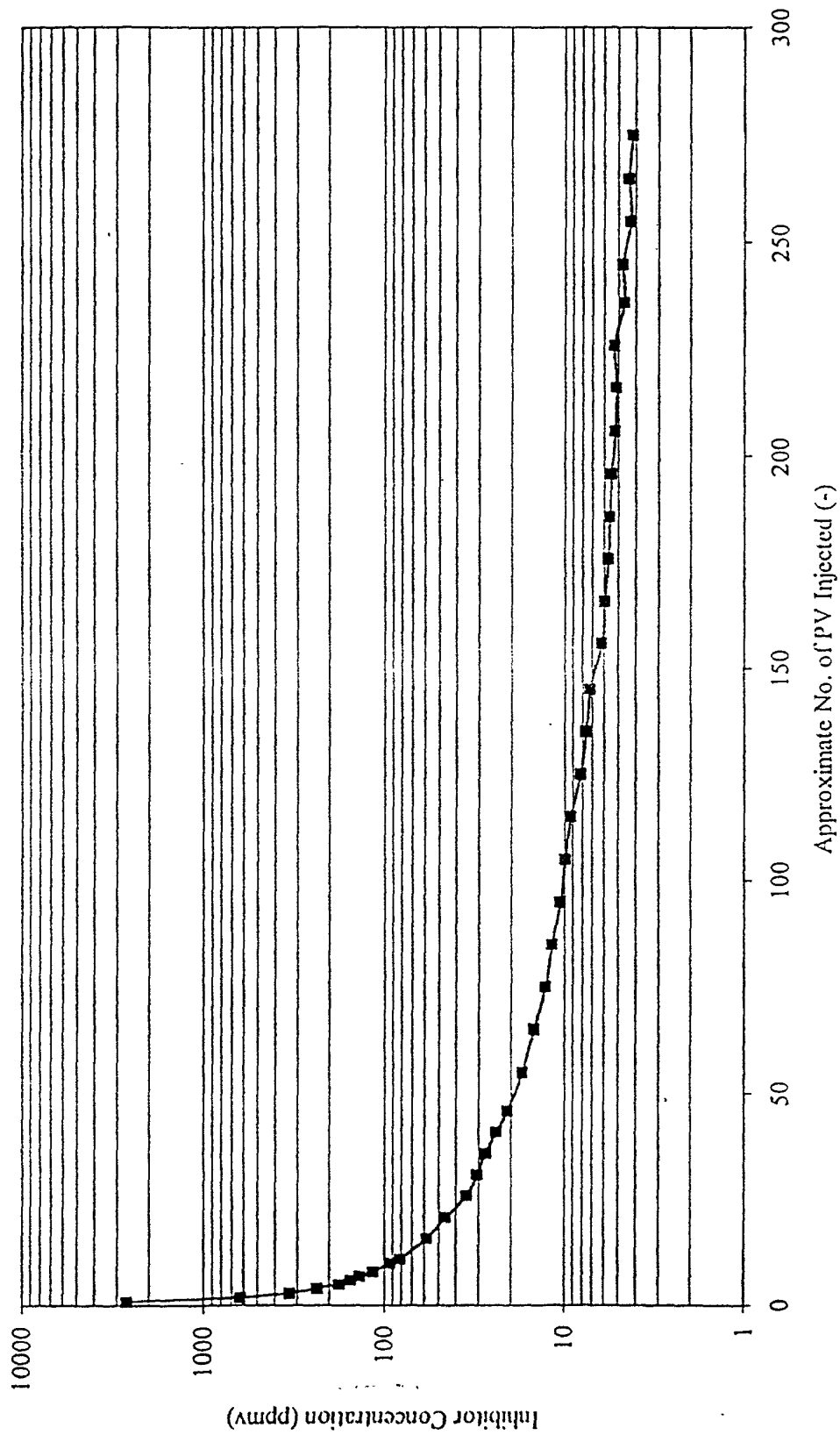


Figure 22. Plug 5. Scale Inhibitor Return Curve.



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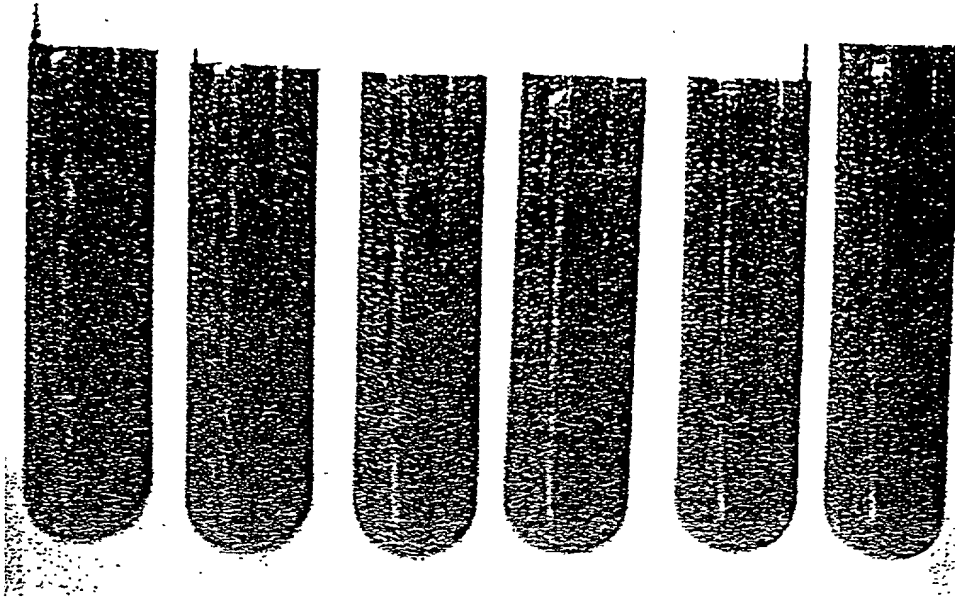


Figure A1. Tubes 1 – 2, crude oil. Tubes 3 – 6, ArivaSol spearhead.

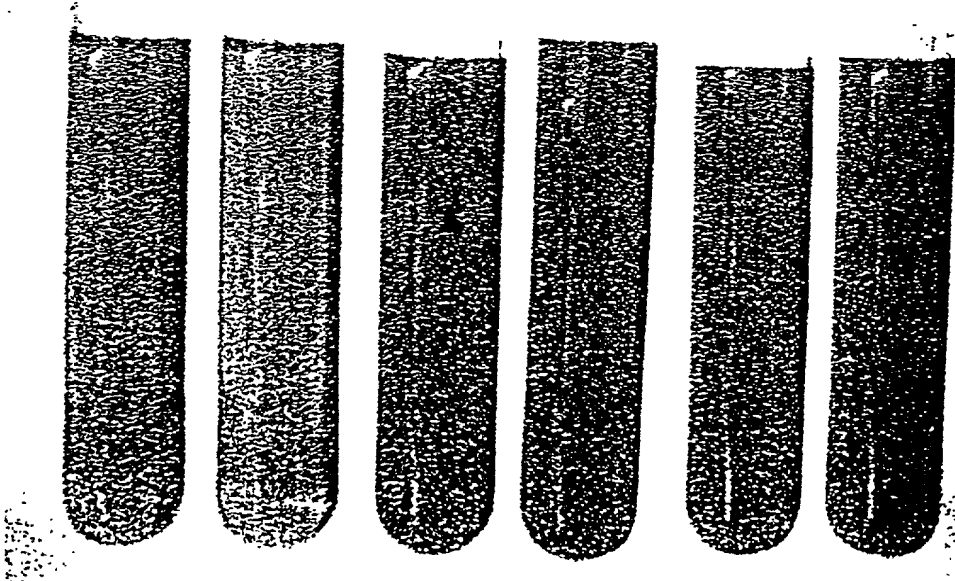


Figure A2. Tubes 7 – 8 ArivaSol spearhead. Tubes 9 – 11, OSi EXP1. Tube 12, OSi EXP2.

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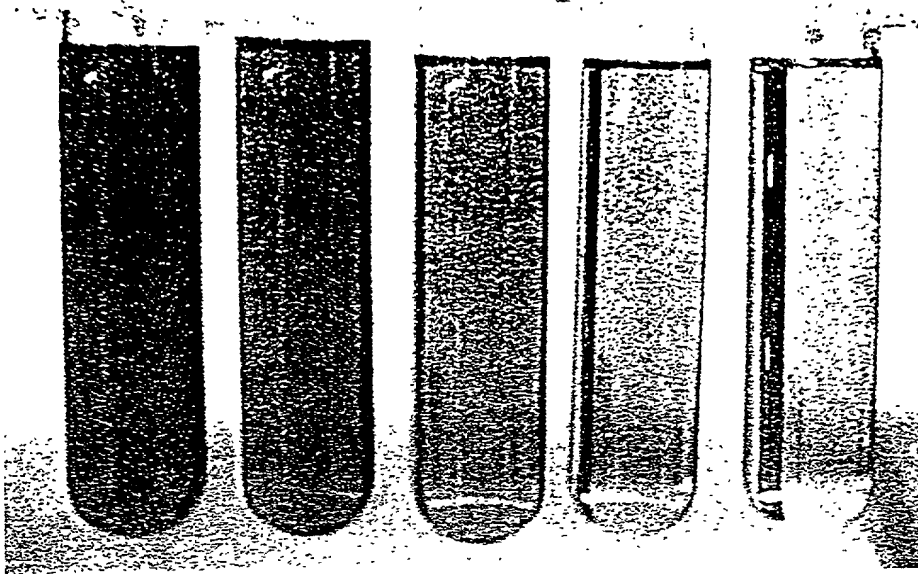


Figure A3. Tube 13, OSi EXP1. Tubes 14 – 17, ArivaSol overflush.

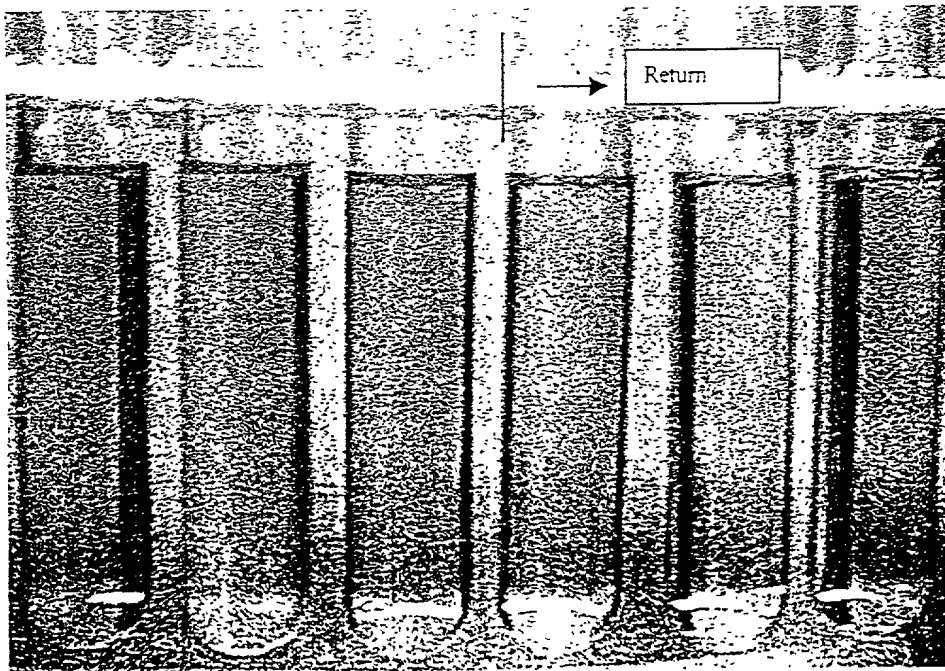


Figure A4. Tubes 18 – 20, ArivaSol overflush. Tubes 21 – 23 ArivaSol overflush return.

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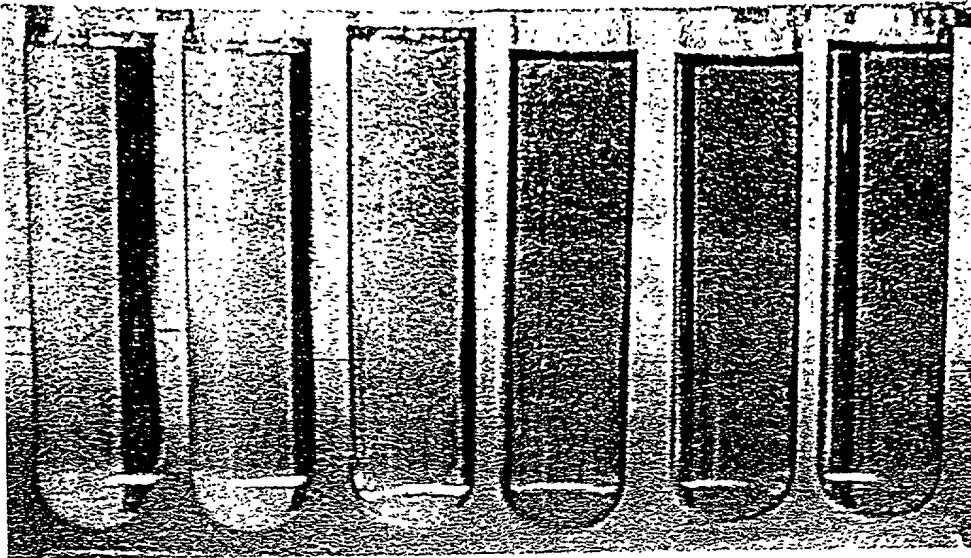


Figure A5. Tubes 24 - 26, ArivaSol overflush return. Tubes 27 - 28, OSi EXP1 return. Tube 29, OSi EXP2 return.

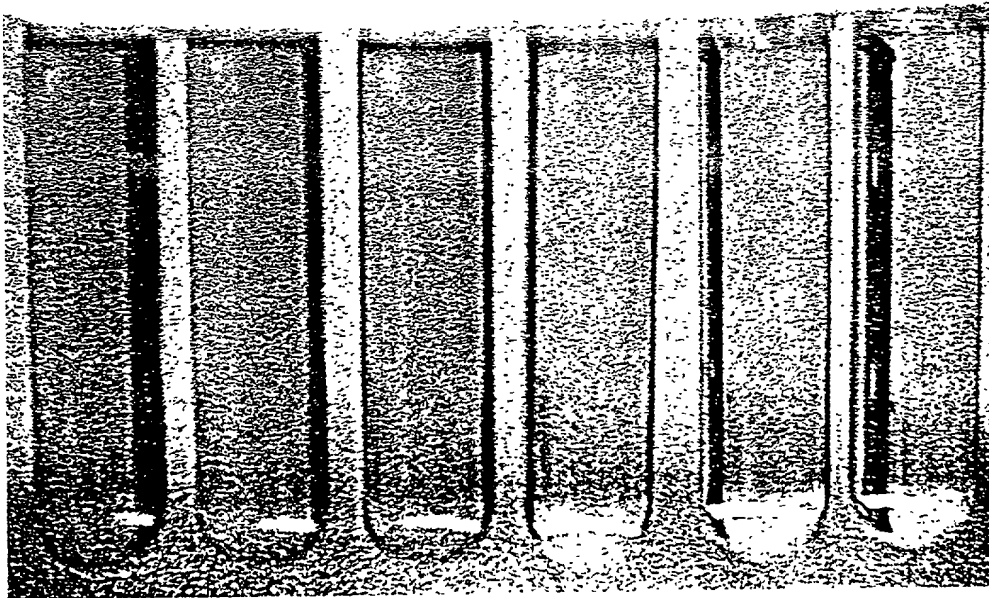


Figure A6. Tubes 30 - 31, OSi EXP2 return. Tubes 32 - 35, ArivaSol spearhead return.

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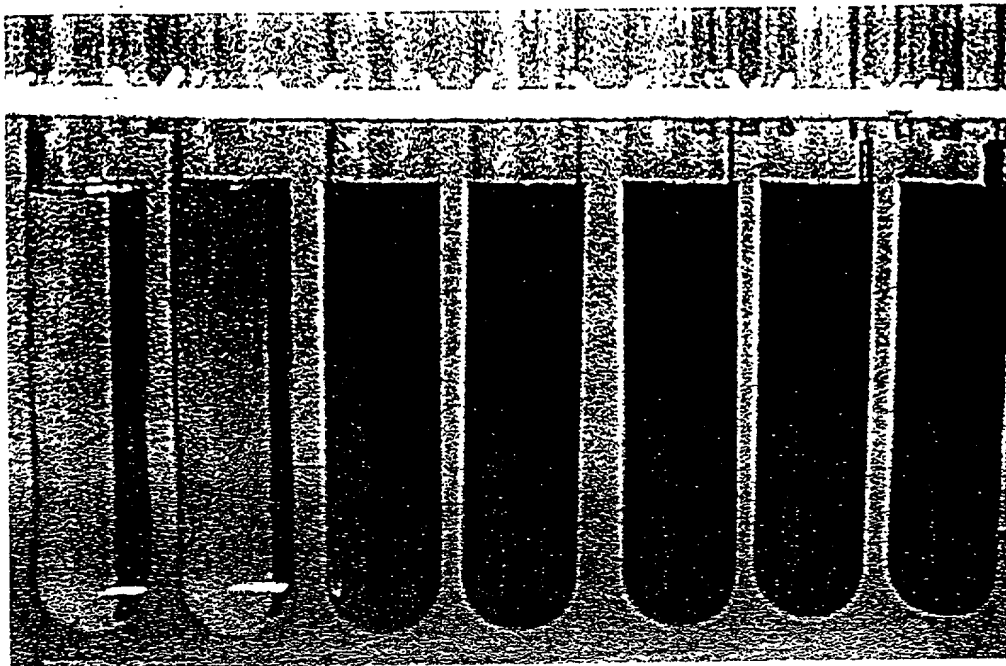


Figure A7. Tubes 36 – 37, ArivaSol spearhead return. Tubes 38 – 42, crude oil return.

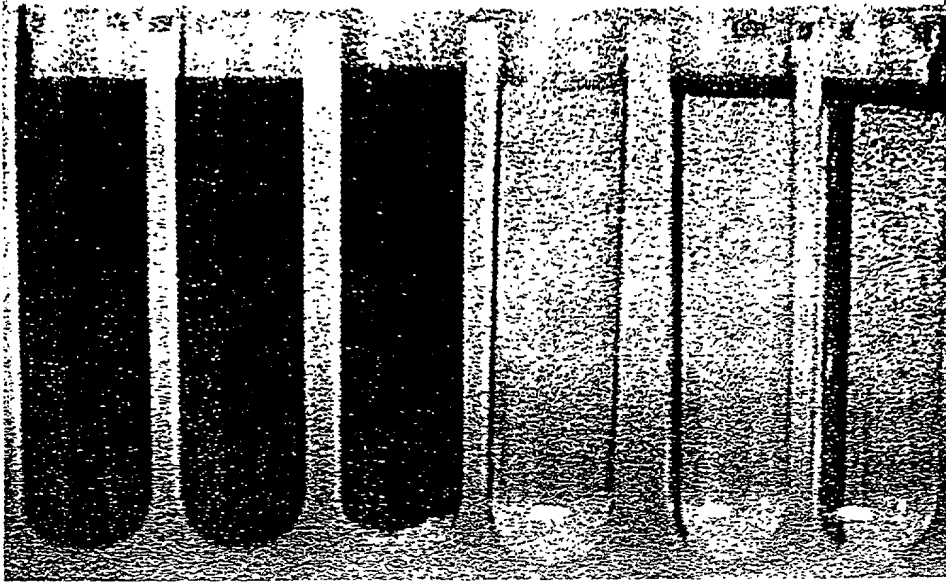


Figure A8. Waterflood: oil dead volume and water breakthrough.

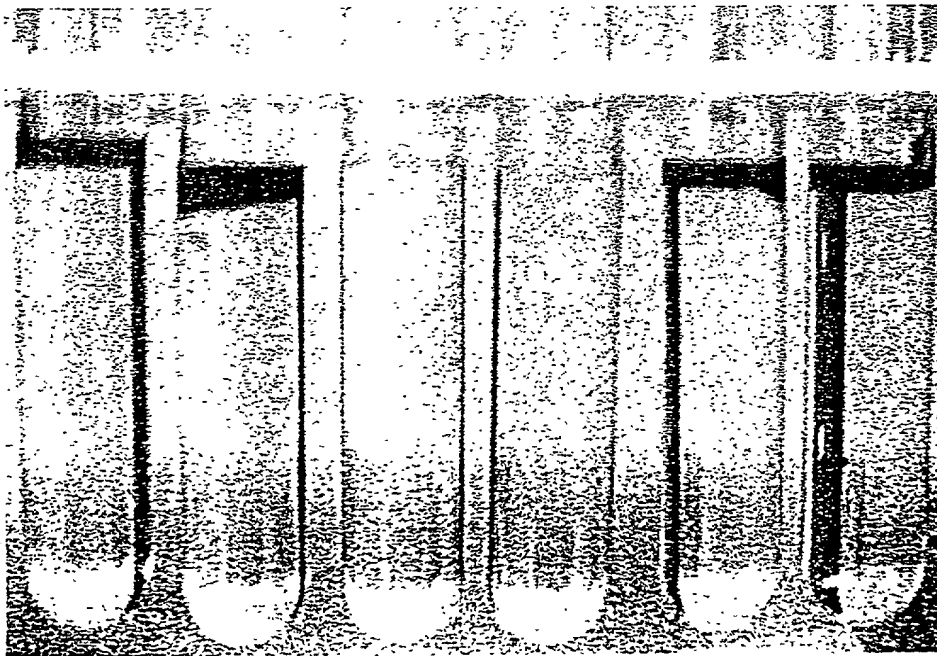


Figure A9. Water production, pore volumes 4 – 9.

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